EVALUATING FINANCIAL PERFORMANCE OF INSURANCE COMPANIES USING RATING TRANSITION MATRICES

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ABSTRACT

Financial performance of insurance companies is captured by changes in rating grades. An insurer is susceptible to a rating transition which is a signal depicting current financial conditions. We employ Rating Transition Matrices (RTM) to analyse these transitions. Within this context, credit quality can either improve, remain stable or deteriorate as reflected by a rating upgrade or downgrade. We investigate rating trends and forecast rating transitions for UK insurers. We also provide insights into the effects of the global financial crisis on financial performance of UK insurance companies, as reflected by rating changes. Our analysis shows a significant degree of rating changes, as reflected by rating fluctuations in rating matrices. We conclude that insurers with higher (better) rating grades depict rating stability over the long-run. An unexpected but interested finding shows that insurers with good rating grades are nevertheless susceptible to rating fluctuations. General insurers are more likely to be rated and they demonstrate higher levels of rating grade variations over the period studied. Using comparative rating transition matrices, we find more variations in rating movements in the post-financial crisis period. We also conclude that general insurers reflect less stable rating outlooks compared to life and general insurers.

Keywords: financial performance, insurance companies, rating transition matrices

JEL Codes: **G22, G24**

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INTRODUCTION

The insurance industry is one of the key players in the financial services sector in almost all developed and developing nations. It contributes to economic growth, efficient resource allocation, reduction of transaction costs, creation of liquidity, facilitation of the economies of scale in investment, and the spread of financial losses (Haiss & Sümegi, 2008, Malik 2011, Doumpos et al. 2012 and Sambasivam and Ayele 2013). Life insurers also contribute towards investment by providing the means to create personal savings through life and pension contracts (Carter and Falush 2009).

The performance of insurance companies not only contributes towards improving the market value of individual firms but also towards industrial growth. It ultimately contributes to overall growth and prosperity of the economy. This subject has attracted much attention, comment and interest from various parties such as regulators, financial experts, researchers, management of business entities and the general public (Omondi and Muturi 2013). Mehari and Aemiro (2013) summarise that evaluating the determinants of insurers' performance has become an important research theme within the corporate finance literature. Due to its importance, a comprehensive method should be employed to measure the financial performance of insurance companies and to identify the factors that influence their performances (Cekrezi, 2015).

Despite its significant contributions to the economy, the insurance industry has been misunderstood within society. Wűrmli (2011) points out that the insurance community has failed to persuade the public of its importance to the society and that regulators have failed to perform regulations properly. In this instance, the insurer's knowledge and expertise are not adequately recognised by the society. Unlike the banking institutions, the insurance industry is less transparent and less informative in terms of educating the public about their mechanism, precise method of operations and contributions to the society.

Cases of insurance companies' failures in recent years and the increasingly challenging financial environment have raised further concerns about the financial performance of insurance industry to its stakeholders. In addition, the recent global financial crisis has affected the financial stability

of the financial service providers such as banks and insurance companies in the United Kingdom (UK) (Boyle 2013). Choi (2013) highlights that due to a severe liquidity freeze, many financial institutions had failed and their failures created more uncertainty about the future for financial market and economic recovery. Information asymmetry during the financial crisis could also influence economic stability of a nation, triggered by conflict of interests between the financial service providers and the regulatory body (Tamegawa 2016).

Pottier and Sommer (1999) argue that the academic literature on the determinants of insurer's financial performance is limited. The same argument is raised in many other scholars' researches (Florez-Lopez 2007 and Burca and Batrinca 2014). There is indeed an ultimate difference between assessing insurance companies and other corporations (Florez-Lopez 2007 and Yakob et al 2013). Despite the various definitions, interpretations and measurements of financial performance, there is no ultimate consensus on the best way to measure performance and to identify the factors that affect financial performance (Liargovas and Skandalis 2008 and Omondi and Muturi 2013).

The financial performance of insurance companies could be reflected by the changes in the rating grades. Rating changes become the signal to depict the current financial condition of a company (Hadad et al 2009). Many studies have employed Rating Transition Matrices (RTM) to depict rating transitions (migration or movement to another rating grade). These matrices have been used extensively to study rating performance on large financial corporations and banks (Stefanescu et al 2009 and Shao et al 2016), corporate bond performance (Hadad et al 2009), sovereign credit ratings (Hill et al 2010), consumer loans (Malik and Thomas 2012) and government bonds (Tamegawa 2016). Wang (2010) evaluates rating transitions for US insurance companies and establishes that insurer rating changes differ across economic and industry cycles. The rating grades represent an overall assessment of an insurer's creditworthiness (Frydman and Schuermann 2008). These ratings, together with the financial and non-financial information obtained during the rating process can become a powerful tool to assist decision-making for the stakeholders. However, the rating process is not totally transparent, and their analysis and determinants are not available to the public. Thus, it becomes a constraint for stakeholders to analyse and use the rating information (Estrella et. al., 2000).

Insurer ratings are extensively used to evaluate insurers' financial strength and insolvency risk (Wang and Carson 2014). However, previous studies have mainly focused on insurers in the United States (US) (Doherty et al 2012, Kartasheva and Park 2012 and Leon and Pottier 2016). Thus, this study attempts to address this issue by investigating the rating performance of non-US insurance companies. The analysis is based on the widely-used Markov theory, but its application is focused on the UK insurance industry.

The global financial crisis (2007 – 2009) resulted in an uneven impact on the insurers. Some insurers are severely affected by the crisis while some others remain steadfast (Eling and Schmeiser 2010 and Baluch et al 2011). Within the insurance industry itself, insurers' assets and liabilities or their balance sheets have been significantly affected by the recent financial crisis (Guinn et. al. 2008). Schich (2009) argues that during the crises, insurers experience face valuation pressure which is caused by assets that are mostly held in bonds and stocks. The UK insurance industry is also affected by the crisis as reflected by the decline of insurance density and insurance penetration levels. Insurance density (ID) is an indicator to measure individuals spending on insurance products. Insurance penetration (IP) measures the importance of insurance activities relative to the size of the economy. Higher ID and IP values indicate better quality of insurance business. This study seeks to highlight the effect of the financial crisis as shown in the rating grades' changes by utilising comparative analyses.

In summary, the aim of this study is to evaluate financial performance (FP) of UK insurance companies by analysing their rating performance. It attempts to investigate rating trends and forecast rating movements through the application of rating transition matrices. This study extends previous research by comparing the financial performance between two different periods, namely the pre-financial crisis period and the post-financial crisis period.

This paper is organized as follows. Section "Empirical Strategy" describes our data selection, research methodology and its theoretical basis. Section "Findings and Discussions" evaluates and compares insurers' rating by developing the matrices. This section focus on evaluating noticeable trends from the matrices and the impact of the financial crises on insurers' ratings performance. The limitations of this study and our recommendations are included in the final section.

EMPIRICAL STRATEGY

There are many external credit rating agencies in the market such as A.M Best (Best), Standard & Poor, Moody's and Fitch. Each rating agency has their sets of standards and methodologies in the rating analysis. However, Trueck and Rachev (2009) state that these variations are tolerable and acceptable, even by the regulatory bodies. In this study, the selection of a rating agency is influenced by factors such as financial constraint, data availability, accessibility and research requirements. After deliberating all available options, the A.M Best rating agency has been selected for this study. The decision to select the A.M Best database is also influenced by its credentials as the oldest rating agency of insurance companies and its ability to offer the most comprehensive insurance rating coverage (Wang 2010 and Eckles and Pottier 2011).

The A.M Best Financial Strength Ratings (FSR) which serves as an indicator of insurers' financial strength and ability consists of 16 individual rating grades which are grouped into ten categories. These categories are further clustered into two distinctive positions labelled as "secure" and "vulnerable". The grades and categories are illustrated in Table 1.

Table 1

Rating Grades and Categories Used in A. M. Best Financial Strength Ratings.

A. M. Best Financial Strength Ratings: Scales		
Position	***Descriptor***	***Grade(s)/Symbol***
Secure	Superior	**A++ and A+**
	Excellent	**A and A-**
	Good	**B++ and B+**
Vulnerable	Fair	**B and B-**
	Marginal	**C++ and C+**
	Weak	**C and C-**
	Poor	**D**
	Under Regulatory Supervision	**E**
	In Liquidation	**F**
	Suspended	**S**

Source: A. M. Best 2010.

The sample in this study consists of 57 insurers. Our sample selection choices are contrained by limited data availability. One-year access to the database (2010 – 2011) has been purchased, which provides rating data from 2003 to 2011. However, data for 2011 are mostly incomplete and unavailable, thus the sample size has been restricted to include all available data from 2003 to 2010. There are two possible justifications for data limitation and unavailability. First, rating assessment is a voluntary practice and second, rating assessment by external rating agencies is very expensive. Thus, an insurer might not be motivated to apply for rating assessment if their company is facing financial issues. Otherwise, even if an insurer is keen to apply for rating assessment, the rating fee might be beyond their means.

To the best of author's knowledge, there has been little discussion about the application of rating transition matrices (RTM) to evaluate insurers' rating performance. Transition matrices could be estimated for any desired transition horizon (Bangia et al 2002 and Hadad et al 2009). It is most common to use annual data and 5-yearly data for analysis. According to Kryzanowski and Menard (2001), the time horizon of the analysis does influence the probability of a bond to remain at its initial rating. The longer the time horizon, the lesser the possibility of remaining unchanged.

A Markov chain is a stochastic process based on a sequence of random variables $X_0, X_1, X_2, ..., X_n$ exhibiting the Markov property. There are two key features in a Markov chain. Firstly, the outcome of each experiment is one of a set of discrete states and secondly, the outcome of an experiment depends only on the present state, and not on any past states. Markov chains are useful in analysing trends and predicting future outcomes.

A general definition could be written as follows:

$$\mathrm{P}(X_{n+1}|X_0, \dots, X_n) = \mathrm{P}\ (X_{n+1}|X_n) \tag{1}$$

Where $X_0, X_1, X_2, ..., X_n$ are the sequence of random variables. In this study, X_n denotes the rating grades included in the analysis. These rating grades are assigned to insurance companies by independent rating agency to reflect the financial performance of the insurer. The rating grades

use a combination of alphabetical letters, numbers and mathematical operators (+ and -) as indicators of insurers' financial strength and ability.

Based on Crossman et al (2009), a discrete time and discrete state space stochastic process is Markovian if and only if the conditional probabilities do not depend on (X_0, . . . , X_n) in full, but only on the most recent state of X_n. The probability of going to any next state at time $n+1$ depends only on the state at time n. The system is said to be *memoryless*.

Alternatively, Markov chains could also be described graphically, where the rows and columns are labeled by the probabilities of going from one state to the other states. Conditional upon a given rating grade at time t (rows), the transition (or migration) matrix P is a description of the probabilities of being in any of the various grades at time $t+1$(columns). These guidelines provide the basic structure of a rating transition matrix as illustrated in Diagram 1.

Diagram 1

Basic Structure of the Transition Matrix

		Grades at time $t+1$ (To:)							
		A++	A+	A	A-	B++	B+	B	NR5
Grades at time t (From:)	A++	■							
	A+		■						
	A			■					
	A-				■				
	B++					■			
	B+						■		
	B							■	
	NR5								■

Source: Author's compilation based on dataset with reference to Bangia et al (2002).

As shown in Diagram 1, there are eight rating grades evaluated in this study. The rating grades are A++,A+, A, A-, B++, B+, B, and NR5. Rating grade A++ is the most superior, which is

followed by the rest. Rating grade NR5 is assigned to firms that are not formally evaluated. All these rating grades allow the estimation of 8 * 8 = 64 unique elements of matrix P; which is a conceptual interpretation as illustrated in Diagram 1. The highlighted areas (along the diagonal lines) represent the areas which have no transition. In other words, any value that falls within the highlighted areas refers to the probability of not having a rating change or maintaining the current rating grades.

FINDINGS AND DISCUSSIONS

Rating Grades Assigned by Type of Business

Table 2 exhibits the distribution of rating grades assigned, relative to the type of insurance business. There are eight rating grades assigned to insurers (general, life and composite) in the sample. The unbalanced panel yields 437 observations.

Table 2

Rating Grades Assigned by Type of Insurance Business

Grade	General	Life	Composite	Total (Insurers)
A++	35	0	1	36
A+	56	20	17	93
A	103	16	15	133
A-	96	13	11	120
B++	20	5	0	25
B+	1	0	5	6
B	1	0	0	1
NR5	22	1	0	23
Total (Obs.)	334	55	48	**437**

According to Best's rating categories, rating grades of B+ and above are placed in the "Secure" category. Accordingly, rating grades of B and lower are placed in the "Vulnerable" category (A.M. Best 2010). It appears that almost all insurers in the sample obtained good rating grades, i.e. the distribution concentrates on grade "A-" and above. General insurers depict a widespread rating distribution in all rating categories, with most observations fall under "A-" and above. Conversely, the assignment also includes a "NR5" rating grade. The "NR5" grade is assigned to insurers with conditions that could impede the rating assessment process. Examples of these conditions include

insufficient data (NR1), company's request to be omitted from the assessment (NR3), and not formally followed (NR5) (A.M.Best 2010). The "NR5" grade is accounted in the sample primarily due to their remarkable rating progression, i.e from "NR5" to "A-"within the observation periods.

Rating Transition Matrices

In this analysis, the rating transition matrices (RTM) will be estimated as:

i. Eight-year transition matrix (RTM 2003 – 2010): overall transition
ii. Five-year transition matrix (RTM 2006 – 2010): long-term transition
iii. Three- year transition matrix (RTM 2008 – 2010): short-term transition

Bangia et al (2002) establish that transition matrices can be estimated for any desired transition horizon. However, a shorter measurement interval reflects lesser transitions and less extreme movements. The justification for the different time settings for all matrices is to investigate rating transitions at various time settings. It is predicted that there will be significant differences in the result that will be able to answer the research question – what is the probability of a rating change?

This study will also attempt to estimate the transition matrices according to types of insurance business. There are three types of insurers in the sample – general, life and composite insurers. All sub-samples will be estimated using the most recent five-year time period, from 2006 to 2010, as follows:

iv. RTM for general insurers (RTM General)
v. RTM for life insurers (RTM Life)
vi. RTM for composite insurers (RTM Composite)

The full sample consists of 437 observations taken from 57 insurers over the eight-year period. However, the data are regarded as unbalanced, indicating that there are some missing data in the sample. Due to this limitation, the sample accounts for 57 insurers with almost complete data over the eight-year period. An insurer with incomplete data but who has at least three-year data is also included in the sample. This is done in order to increase the sample size and generalisability of the outcomes.

The highlighted cells in these matrices indicate areas with "NO TRANSITION", i.e the probability of a rating grade to remain at the current category. All companies have a higher probabilities of remaining at their current rating category if higher percentages are shown along the diagonal (the highlighted areas). Diagram 2 illustrates the transition matrices according to the duration of years studied.

Findings from all matrices in Diagram 2 can be concluded as follows:

i. A++ rated insurers reflect the strongest performance in all periods of observations (eight-year, five-year and three-year). The probability on remaining at their current rating grade is very high, with probability scores of more than 0.9300. The findings conform to Carty and Fons (1994) that the higher-quality ratings have a higher likelihood of remaining unchanged than the lower-quality ratings.

ii. Interestingly, from all estimations, A-, B++ and B+ depict greater chances of rating upgrades relative to the downgrades. Thus, it can be concluded that for any of the given time horizons, insurers with these rating grades (A-, B++ and B+) tend to obtain higher ratings at the end of the period. In addition, mid-range rating grades tend to be more vulnerable as compared to the other grades.

iii. Frydman and Schuermann (2008) highlight that the reason for an insurer to be assigned an NR-grade is unknown. The NR-grade itself does not reflect "good' or "bad" rating performance. In this study, NR5-rated insurers show remarkable chances of rating upgrades in all three estimations. Thus, it is concluded that in this study, NR-rated insurers do not signify poor financial performance.

Outcomes from these analyses reflect higher probabilities of upgrades are achievable if the insurers show remarkable improvements in their financial performance. It highlights noticeable rating trends and forecasts the probability of rating movements through the application of rating transition matrices. Thus, the findings correspond to the research question – what is the probability of a rating change? There is a higher probability of a rating change, which concentrates more on rating upgrades.

Diagram 2

Rating Transition Matrices According to Duration of Years

Matrix A: Eight-Year Rating Transition Matrix (%)
All Insurers, 437 Observations, 2003 - 2010

	Rating: To(%)							
From (%)	A++	A+	A	A-	B++	B+	B	NR5
A++	**93.75**	6.25	0	0	0	0	0	0
A+	1.18	88.24	**10.59**	0	0	0	0	0
A	0	7.92	88.12	2.97	0	0	0	0
A-	0	0	**15.60**	83.49	0.99	0	0	0.92
B++	0	0	0	**30.43**	69.57	0	0	0
B+	0	0	**16.67**	**16.67**	0	66.67	0	0
B	0	0	0	0	**100.00**	0	0	0
NR5	0	0	8.70	8.70	8.70	4.33	0	69.57

Note: "B" rated insurers managed to migrate from its current rating grade (B) to grade B++. However, the column for "B" grade is included for ease of observation.

Matrix B: Five-Year Rating Transition Matrix (%)
All Insurers, 282 Observations, 2006 - 2010

	Rating: To(%)						
From (%)	A++	A+	A	A-	B++	B+	NR5
A++	**94.44**	5.56	0	0	0	0	0
A+	0	84.00	**16.00**	0	0	0	0
A	0	1.37	97.26	1.37	0	0	0
A-	0	0	**19.70**	80.30	0	0	0
B++	0	0	0	**20.00**	80.00	0	0
B+	0	0	**50.00**	0	0	50.00	0
NR5	0	0	9.09	18.18	9.09	0	63.64

Note: No companies fall into the rating category B for the years observed thus column for grade B is omitted from the table.

Matrix C: Three-Year Rating Transition Matrix (%)
All Insurers, 171 Observations, 2008 - 2010

	Rating: To(%)					
From (%)	A++	A+	A	A-	B++	NR5
A++	**100.00**	0	0	0	0	0.00
A+	0	68.18	**31.82**	0	0	0.00
A	0	2.08	**97.92**	0	0	0.00
A-	0	0	**27.59**	72.41	0	0
B++	0	0	0	0	**100.00**	0.00
NR5	0	0	0	50.00	25.00	25.00

Note: No companies fall into the rating category of grades B+ and B for the years observed.

Diagram 3

Rating Transition Matrices According to Type of Insurers

Matrix D
Rating Transition Matrix (%)
General Insurers, 218 Observations, 2006 - 2010

	Rating: To(%)					
From (%)	A++	A+	A	A-	B++	NR5
A++	**94.44**	5.56	0	0	0	0
A+	0	86.21	**13.79**	0	0	0
A	0	0	**98.25**	1.75	0	0
A-	0	0	**18.87**	81.13	0	0
B++	0	0	0	**20.00**	80.00	0
NR5	0	0	9.09	18.18	9.09	63.64

Note: No companies fall into rating grades B+ and B during the observation period (2006 to 2010). Thus, rows/columns for rating grades B+ and B are omitted from the table.

Matrix E
Rating Transition Matrix (%)
Life Insurers, 34 Observations, 2006 - 2010

	Rating: To(%)		
From (%)	A+	A	A-
A+	66.67	**33.33**	0
A	0	**100.00**	0
A-	0	**22.22**	77.78

Note: No companies fall into rating grades A++, B++, B+, B and NR5 during the observation period (2006 to 2010). Thus, rows/columns for these rating grades are omitted from the table.

Matrix F
Rating Transition Matrix (%)
Composite Insurers, 30 Observations, 2006 - 2010

	Rating: To(%)			
From (%)	A+	A	A-	B+
A+	**100.00**	0	0	0
A	10.00	90.00	0	0
A-	0	**33.33**	66.67	0
B+	0	**50.00**	0	50.00

Note: No companies fall into rating grades A++, B++, B and NR5 during the observation period (2006 to 2010). Thus, rows/columns for these rating grades are omitted from the table.

Diagram 3 illustrates the transition matrices according to the type of insurers. Values in bold indicate significant findings that will be discussed. Outcomes from all matrices can be summarised as follows:

i. General insurers depict more rating grade variations during the observation period viz. 2006 – 2010. There are six grades generated (A++, A+, A, A-, B++ and NR5). In contrast, there are only three grades to represent life insurers' rating performance and four grades for composite insurers. We assume that lack of data largely causes these differences to arise. Our justification is similar to previous studies that dealt with limited data, which subsequently restrict the possible outcomes that are analysed (e.g. Hu et al; 2002, Bae et al 2007 and Fuertes and Kalotychou 2007).

ii. The rating variations which are evident in Matrix D indicate that financial performance in the general insurance market is more volatile than the others, as reflected in the rating fluctuations.

iii. Life insurers depict less variations in rating grade transitions. This might be attributed to the nature of the life insurance business itself. It is a long term business transaction with a more stable cash flow and performance outlook. Thus, the life insurance business is less volatile compared to general insurance business. It is reflected in the stability of the rating transitions over the years which centers on the higher grades (i.e. 'good' grades).

We conclude that outcomes from these analyses reflect a significant difference in rating performance as influenced by the type of insurance companies being analysed. These outcomes are comparable to findings from other studies that general and composite insurers are more likely to be rated than life insurers. These outcomes are also in accord with Kartasheva and Park (2012) where general and composite insurers tend to obtain good rating grades in order to boost company's reputation, reduce cost of capital and signal stronger financial performance.

Comparative Rating Transition Analysis: All Insurers

Following De Mey (2009) and Salvador et al (2011), we investigate the effects of the financial crisis on the rating performance by comparing outcomes from the two specified periods. Diagram 4 depicts the comparative transition analysis for all insurers during the pre-financial crisis (Matrix

G: 111 observations) and post-financial crisis periods (Matrix H: 171 observations). The values in the diagonal are highlighted, and the outstanding result are shown in bold.

Diagram 4
Comparative Matrices Based on Two Different Financial Periods
Pre-Financial Crisis (pre-FC) and Post-Financial Crisis (post-FC)

Matrix G: Pre-Financial Crisis
Rating Transition Matrix (%)
All Insurers, 111 Observations, 2006 - 2007

	Rating: To (%)						
From (%)	A++	A+	A	A-	B++	B+	NR5
A++	100.00	0	0	0	0	0	0
A+	0	100.00	0	0	0	0	0
A	0	0	100.00	0	0	0	0
A-	0	0	**10.53**	89.97	0	0	0
B++	0	0	0	**100.00**	0	0	0
B+	0	0	0	0	0	100.00	0
NR5	0	0	**25.00**	0	0	0	75.00

Note: No companies fall into rating grade B during the observation period (2006 to 2007). Thus, rows/columns for rating grade B is omitted from the table.

Matrix H: Post-Financial Crisis
Rating Transition Matrix (%)
All Insurers, 171 Observations, 2008 - 2010

	Rating: To (%)					
From (%)	A++	A+	A	A-	B++	NR5
A++	100.00	0	0	0	0	0
A+	0	68.18	**31.82**	0	0	0
A	0	2.08	97.92	0	0	0
A-	0	0	**27.59**	72.41	0	0
B++	0	0	0	0	100.00	0
NR5	0	0	0	**50.00**	**25.00**	25.00

Note: No companies fall into rating grade B+ and B during the observation period (2008 to 2010). Thus, rows/columns for rating grade B+ and B are omitted from the table.

Our comparative analysis shows that there is a significant difference in the rating performance before and after the financial crisis. Rating performance depicts a stable outlook before the crisis, as reflected in the definite chances of maintaining the current rating grade. Conversely, rating performance after the crisis show less stability and more variations. Insurers are susceptible to the risk of rating downgrades, irrespective of their strong financial performance prior to the financial crisis.

Our analysis shows that the NR5 have remarkable likelihood of rating upgrades, with the best achievement shown at 5-rating magnitude, and this has been shown to be the case repeatedly for all durations of analysis. On the other hand, A.M Best assigns A+ rating grade to insurers that have superior ability to meet their ongoing insurance obligations. Theoretically, the A+ rated insurers should be able to maintain their current rating positions. However, surprisingly, our analysis reflects that A+ rated insurers show the highest probability (prob=0.3182) of rating downgrades.

These findings also conform to Carty and Fons (1994), that the higher-quality ratings have a higher likelihood of remaining unchanged than the lower-quality ratings. In our study, A++ rated insurers reflect a definite chance of maintaining their current rating grade, irrespective of the periods. A++ rating grade is assigned to insurers that have the superior ability to fulfill their ongoing insurance obligations. In this case, A++ rated insurers manage to maintain their rating performances which imply that their financial performances are not affected by the financial crisis.

CONCLUSIONS

Rating grades are good indicators of insurer's financial performance (Wang and Carson 2014). Insurers who obtain higher rating grades reflect positive financial outlook to the market and the public. They will have more opportunity to secure new business growth and lower market cost of capital. In return, customers or policyholders will have more assurance about the reputation of the company in fulfilling their financial obligations irrespective of the economic outlook. Thus, it is imperative for insurers to reflect good rating grades in order to protect their reputations.

There are pros and cons following a rating change. A rating upgrade signifies a positive outlook on the insurer's financial performance. The market will react positively following a rating upgrade, providing more business opportunities and higher profitability in the long-run. Conversely, a rating downgrade poses threats to insurers. Rating downgrade implies deterioration in insurer's financial strength. Insurers might be experiencing financial difficulties, losses due to catastrophic risks or mismanagement issues. These deficiencies will be considered in the rating assessment (A.M Best 2010) that will eventually impair the rating outlook of an insurer. Thus,

rating downgrades is not a favourable market indicator. In addition, negative rating outlook (rating downgrade) triggers a negative reaction from the market (Eckles and Halek, 2012).

A notably contradictory finding shows that insurers with good rating grades are still susceptible to rating fluctuations. This is evident in cases of A+ rated insurers. Despite being rated as one of the superior category, these insurers reported higher possibility of rating downgrades. It reflects a negative outlook of the overall company performance. In return, this will influence customers' perception towards the insurer and restrict new business opportunities.

Interestingly, insurers in the lower rating categories depict positive rating outlooks. They have a greater probability of being upgraded to a higher rating category, which is a favourable outcome. In addition, the sample includes a special rating category, namely NR5. These rating grades are assigned to insurers in the A.M Best database, on the basis that they have applied and obtained rating grades from the agencies, but they did not formally maintain regular rating assessment exercise. In this study, NR5-rated insurers show remarkable chances of rating upgrades. Thus it is concluded that NR-rated insurers do not signify poor financial performance.

The comparative analysis highlights significant differences in the rating performance before and after the financial crisis. Rating performance depicts a stable outlook before the crisis, as reflected in the definite chances of maintaining the current rating grade. Conversely, rating performance shows less stability and more variations after the crisis. Insurers are susceptible to the risk of rating downgrades, irrespective of their strong financial basis prior to the financial crisis. These findings correspond to the previous work of Ekins and Calabria (2012), that ratings are relatively stable in the short-run since rating agencies do not impart new information on a frequent basis. However, matrices in the post-financial crisis period reflect more chaotic movements. The fluctuation in rating trends in the post-financial crisis period corresponds to the objective, that there is a significant difference in the rating performance between the two financial crisis periods. The rating instability is one of the effect of information asymmetries caused by the recent global financial crisis.

The analyses strategies in this study provide useful tools to evaluate the financial performance of insurance companies. Insurers can attempt to generate the rating transition matrices in order to predict their rating trends. These analyses can serve as the initial or internal assessment that could be done by each and every insurance company in order to detect financial problems at its onset.

The major limitation of this study is the sample size and access to the data. The success of this research depends on the availability of the insurance company financial data and rating reports. This study does not employ the data made available to public,but the one that is reported to the regulators, or the statutory reports. After the data screening process, we had a small sample size which is restricted to companies with complete and available data for the period specified. The same issue has been raised in many studies (Hadad et. al 2009, Ismail 2013 and Burca and Batrinca 2014).

The recent global financial turmoil had caused large losses in the industry and the latest regulatory reforms change the industry. Thus, further investigation is warranted to study the impact of the recent global financial crisis on insurance companies. In addition, the inclusion of qualitative variables in the analyses will produce more accurate estimations and better evaluation in assessing insurer's financial performance. All these necessitate further investigations and should be the focus of future researches.

Instead of focusing on the UK insurance industry, future studies should focus on other industries such as the European countries or Asian insurance markets. In addition, the information asymmetries arising out of dissimilar framework, various policy recommendations, different economic background, macro-prudential regulation and consequences of the financial crisis should be acknowledged and investigated thoroughly. Thus, better conclusions could be derived about the financial resilience of an insurance company, relative to the others. Alternatively, insurer performance could also be compared by looking at the rating grades assigned by different rating agencies and type of insurance business.

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